

PCTWORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureau

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

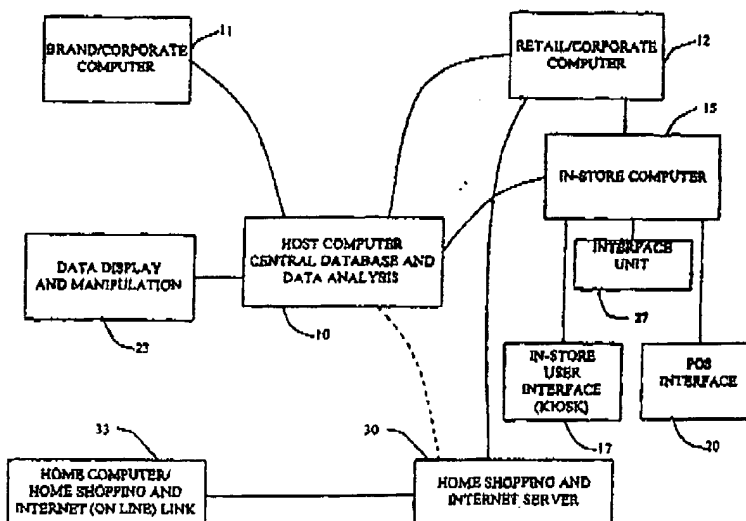
(51) International Patent Classification ⁶ : G11B		A2	(11) International Publication Number: WO 98/21713
			(43) International Publication Date: 22 May 1998 (22.05.98)
(21) International Application Number: PCT/US97/20765		(81) Designated States: AU, CA, JP, MX, US, European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).	
(22) International Filing Date: 14 November 1997 (14.11.97)		Published Without international search report and to be republished upon receipt of that report.	
(30) Priority Data: 60/030,492 15 November 1996 (15.11.96) US			
(71) Applicant (for all designated States except US): I.2.1. PRE-CISE INFORMATION LLC [US/US]; 134 Charter Oak Drive, New Canaan, CT 06840 (US).			
(72) Inventors; and (75) Inventors/Applicants (for US only): LEVILLE, Kevin, J. [US/US]; 134 Charter Oak Drive, New Canaan, CT 06840 (US). KLINGENBERG, Tim, P. [US/US]; 12314 East 27th, Spokane, WA 99216 (US). BLYTH, Michael [US/US]; 2311 Central Park, Evanston, IL 60201 (US).			
(74) Agent: FREDERICK, James, R.; Ware, Fressola, Van der Sluys & Adolphson LLP, Bradford Green, Building Five, 755 Main Street, P.O. Box 224, Monroe, CT 06468 (US).			

Best Available Copy

(54) Title: **MERCHANDIZING SYSTEM**

(57) Abstract

A host computer is used as the overall control point of a merchandising system. The host computer is interconnected to a brand corporation computer wherein a manufacturer, distributor, or other entity supplying products and offering discounts on products can update the host computer with information relative to specific products. The host computer is also interconnected to an in-store computer which serves as an interface to consumer interface kiosks and in-store points of sale. The host computer is used to track consumer buying behavior through information provided by a point-of-sale. The host computer analyzes the information according to brand and retail criteria, and based on a consumer specific profile, a consumer specific discount is determined for each consumer for each product on promotion in the program. A discount may be provided by the retail store and/or the brand corporation. When a consumer is specifically identified at a kiosk, a customized list of discounts is printed for the specific consumer. The list includes the new "targeted net price" for the promoted product, which is the store price less the consumer specific discounts. This price is automatically applied to that product at the point of sale. Consumer home shopping behavior may also be used to refine the consumer profile. Additionally, the consumer profile may be used to target discount and promotions to home shoppers. The consumer profile may also be used for determining specific consumers that should be offered free product samples. The



FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AL	Albania	ES	Spain	LS	Lesotho	SI	Slovenia
AM	Armenia	FI	Finland	LT	Lithuania	SK	Slovakia
AT	Austria	FR	France	LU	Luxembourg	SN	Senegal
AU	Australia	GA	Gabon	LV	Latvia	SZ	Swaziland
AZ	Azerbaijan	GB	United Kingdom	MC	Monaco	TD	Chad
BA	Bosnia and Herzegovina	GE	Georgia	MD	Republic of Moldova	TG	Togo
BB	Barbados	GH	Ghana	MG	Madagascar	TJ	Tajikistan
BE	Belgium	GN	Guinea	MK	The former Yugoslav Republic of Macedonia	TM	Turkmenistan
BF	Burkina Faso	GR	Greece	ML	Mali	TR	Turkey
BG	Bulgaria	HU	Hungary	MN	Mongolia	TT	Trinidad and Tobago
BJ	Benin	IE	Ireland	MR	Mauritania	UA	Ukraine
BR	Brazil	IL	Israel	MW	Malawi	UG	Uganda
BY	Belarus	IS	Iceland	MX	Mexico	US	United States of America
CA	Canada	IT	Italy	NE	Niger	UZ	Uzbekistan
CF	Central African Republic	JP	Japan	NL	Netherlands	VN	Viet Nam
CG	Congo	KE	Kenya	NO	Norway	YU	Yugoslavia
CH	Switzerland	KG	Kyrgyzstan	NZ	New Zealand	ZW	Zimbabwe
CI	Côte d'Ivoire	KP	Democratic People's Republic of Korea	PL	Poland		
CM	Cameroon	KR	Republic of Korea	PT	Portugal		
CN	China	KZ	Kazakhstan	RO	Romania		
CU	Cuba	LC	Saint Lucia	RU	Russian Federation		
CZ	Czech Republic	LI	Liechtenstein	SD	Sudan		
DE	Germany						

WO 98/21713

PCT/US97/20765

MERCHANDIZING SYSTEM

TECHNICAL FIELD

The present invention is related to a system for offering discounted product prices to targeted consumers, and more particularly, to a merchandizing system which provides discount pricing to specifically identified consumers based on consumer purchasing behavior, consumer profile information and overall consumer purchasing habits including in-store purchasing, home shopping, and other relevant purchasing information.

BACKGROUND OF THE INVENTION

Various discount programs and coupon programs are well-known for providing discounted product prices to consumers in order to persuade consumers to try certain brand products or to maintain consumer loyalty to certain brand products through competitive pricing. For example, some manufacturers provide in-store coupon dispensing machines directly associated with the location of a product to entice consumers to purchase the product at a discounted price. It is also well known to print product advertisements, which include coupons, that offer consumers a discounted product price by redeeming the coupon when purchasing the product at the point of sale (POS). One coupon system provides coupons to selected consumers and specifically identifies the consumers associated with the particular coupons. However, such systems do not provide a discount to a specifically identified consumer based on the past shopping behavior of the consumer.

Paperless coupon systems have also been developed which include for example an integrated circuit (IC) card or magnetic strip card which identifies the consumer and which may also contain product discount information directly on the card. The card may be associated with particular products and/or may be valid for a particular period of time.

Additionally, all of these prior art systems are concerned with providing a specific discount, e.g., the coupon value, having a face value which is subtracted from the list price during check-out at the point of sale

WO 98/21713

PCT/US97/20765

SUMMARY OF THE INVENTION

Objects of the present invention include the provision of a merchandising system that provides a comprehensive analysis of consumer behavior to enable product brand manufacturers and retailers to specifically target product discounts and promotions to specifically identified consumers and/or groups of consumers.

Another object of the present invention is to provide such a merchandising system which includes a centralized database which receives information from numerous merchandising facilities and sources such that a profile of consumer purchasing behavior, which is generated based upon the information contained in the centralized database, is accurate and comprehensive, and is particularly useful to product brand manufacturers and retailers for making decisions regarding product discount pricing and product promotions to be offered to specifically identified consumers to effect the purchasing behavior of the specifically identified consumer.

A still further object of the present invention is to provide such a merchandising system which provides information to the consumer regarding the net price of a promotional product, the net price reflecting the retail price of the product in the particular store less discounts offered by the manufacturer and/or retailer such that the net price is the final price the consumer must pay at the POS.

Another object of the present invention is to provide such a merchandising system wherein the home shopping (on-line) based activity and behavior of the consumer is reflected in the system, and wherein the behavior of the consumer on site at in-store locations, such as retail shopping outlets, is reflected in promotional offers provided to consumers utilizing home shopping services.

According to the present invention, a host or central computer unit (host computer) is used as the overall control point for the system of the present invention. The host computer, which is located remotely from a retail store, may be interconnected to a brand or corporate computer (brand computer) wherein a manufacturer, distributor, or other entity supplying products and offering discounts on

WO 98/21713

PCT/US97/20765

products can update the host computer with information relative to specific products. Such information includes UPC codes which specifically identify products; pricing information indicative of the price of products manufactured for particular regions or for particular stores; discount information indicative of discounts offered to specific consumers which meet certain profile criteria; and other information relevant to the identity or pricing of particular products. Additionally, the Brand computer can receive information from the host computer indicative of consumer activity relative to specific products.

According further to the present invention, the host computer is interconnected to a retail workstation (in-store computer) which serves as an interface to consumer interface means and consumer data acquisition means, the in-store computer being used to transfer information to the host computer. Information may be exchanged between a central retail corporation computer and the host computer and/or in-store computers of stores in the retail chain. The consumer interface means connected to the in-Store computer may include one or more consumer interface terminals (kiosks) which are units specifically designed for interfacing with consumers.

In further accord with the invention, the host computer is used to track UPC level consumer buying behavior through information provided by the store's check-out register or point-of-sale (POS) via the in-store computer. Alternatively, the POS terminals in the retail store may be directly interfaced with the host computer. The host computer analyzes the POS information according to brand and retail criteria, and based on a consumer profile, a consumer specific discount is determined for each consumer for each product on promotion in the program. A discount may be provided by the retail store and/or the brand corporation. This discount is then stored at the consumer interface terminals at the stores in the applicable retail chain or chains. Alternatively, the information may be stored at the retail corporation computer or in the host computer. In this case, the discounts are accessed by the consumer interface terminals via communications with the retail corporation or host computer. The information is stored for a specific time period or until such time as that the consumer

WO 98/21713

PCT/US97/20765

targeted discount is then applied to that individual store's price on that product for that particular day. Based on this information, the consumer interface terminal generates a custom store circular which is customized to the particular consumer. The circular lists the regular price, the discount and the new "targeted net price" for the promoted product. This price is then stored in the in-store computer until the consumer is identified at the POS. At the POS, the net price is automatically applied to that product.

In further accord with the present invention, the host computer analyzes the consumer shopping behavior and classifies the consumer for specific discount offers. More particularly, consumers are classified by brand loyalty, such as loyal, switcher and competitive. Additionally, the consumers are classified by their shopping volume, such as light, moderate and heavy.

According still further to the invention, the home shopping behavior of the consumer may also be utilized by the host computer. A home shopping computer may be interconnected to the central retail corporation computer or the host computer. The home shopping computer may be accessed by consumer home computers via telephone lines, cable lines, satellite communications, or any other suitable means of communications for conducting purchasing transactions with a home consumer. The home shopping behavior of the consumer is then included in the host computer profile of the consumer.

In further accord with the present invention, when a consumer interfaces with a kiosk, the consumer is uniquely identified, for example by entering a unique code or by using an identification card such as a magnetic strip card or integrated circuit card. When the consumer has been validated as a user of the system and specifically identified, user information is relayed to the kiosk from the host computer, or retrieved from a memory in the kiosk, so that specific net price discount offers and promotions may be offered to the consumer. This information may be provided to the kiosk in the form of a list or other information to identify specific discounts that are available to the consumer. The information relative to the consumer is printed out on

30 a shopping list that lists the specific products including brand name, size, etc. and

WO 98/21713

PCT/US97/20765

specific pricing information, such as retail price, discount amount and net price after discount. The consumer can then use the printout or list while shopping to select items from the list to be purchased at the net price after discount. When the consumer exits the store, either the same identification means or the list is used to specifically
5 identify the consumer at the checkout register or point of sale (POS), and the consumer is provided with the discounts identified on the list. After checkout, transaction information relative to the specific consumer and the items purchased are relayed from the in-store computer to the host computer for updating the host computer database. This information is then used to refine the consumer profile based
10 on the shopping habits and behavior of the consumer.

According still further to the present invention, the consumer profile may be used to offer certain discounted prices and other promotional items to a consumer utilizing a home shopping service.

In still further accord with the invention, the consumer profile may be used to
15 provide a free product sample to the consumer. The behavior of the consumer after receiving the free product sample is used to refine the consumer profile and to evaluate the efficacy of the free product sample transaction.

The present invention provides a significant improvement over the prior art because the invention provides a comprehensive profile of a consumer to accurately
20 track and characterize the shopping behavior of the consumer. Additionally, the present invention provides the ability to generate a shopping list which includes discounts to be offered to the consumer and/or net pricing, which is pricing to be offered to the consumer for specific products reflecting a specific retail store price less a discount offered to the specific consumer. This method of providing discounted
25 prices to the consumer as a net price provides the consumer with the ability to comparatively shop such that the net price or discounted price may be compared with the price of other available products.

The foregoing and other objects, features and advantages of the present invention will become more apparent in light of the following detailed description of

WO 98/21713

PCT/US97/20765

exemplary embodiments thereof, as illustrated in the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is a schematic block diagram of a merchandising system in accordance with the present invention;

5 Fig. 2 is a logic flow diagram showing how a user of the merchandising system of Fig. 1 utilizes the system when entering a participating store;

Fig. 3 is a diagram showing a shopping list printed for a user of the system of Fig. 1;

10 Fig. 4 is a logic flow diagram showing the check out at a point of sale (POS) by a user of the merchandising system of Fig. 1; and

Figs. 5-7 are diagrams showing the classification of consumers based on their purchasing behavior.

DETAILED DESCRIPTION OF THE INVENTION

15 The merchandising system of the invention is particularly well-suited for providing specifically identified consumers with promotional offers and discounted pricing which is specifically targeted to the identified consumer based on the known behavior of the consumer. The system of the invention relies on information provided by brand manufacturers and distributors to uniquely identify information regarding the quantity, size, and pricing of brand products. Also associated with the brand
20 information is specific brand discount information. The system of the present invention also relies on information provided by retail corporations regarding specific brand merchandise carried by the retail corporation, pricing available from the retail corporation for the brand merchandise, and consumer behavior in the retail outlets (stores) owned and/or managed by the retail corporation. For purposes of the present
25 invention, the term "retail corporation" is intended to refer to an entity which is in control of one or more stores or merchandise outlets where a consumer will go to purchase products offered in the store or retail outlet. Additionally, for purposes of

WO 98/21713

PCT/US97/20765

the present invention, a brand corporation, manufacturer or distributor is intended to identify an entity which is the source of retail products provided to retail corporations for sale in stores or retail outlets. Brand corporations typically control the quantity, packaging, and pricing of the products.

5 Referring now to Fig. 1, a host computer 10 is directly coupled to a brand corporation computer 11 and a retail corporation (chain) computer 12. The host computer 10 provides processing and information storage relative to promotion targeting, management and analysis. Additionally, in-store computers 15 are interconnected to the retail corporation computer 12 and host computer 10. Each in-
10 store computer 15 is interconnected to one or more in-store consumer interfaces (kiosks) 17 and to the in-store point of sale (POS) 20, e.g., cash registers.

Promotion targeting is controlled based on the allocation of specific promotions to consumers that meet certain purchasing behavior patterns. These behavior patterns may be identified according to shopping frequency, items purchased
15 during shopping, product loyalty, number of items purchased during shopping, amount spent during shopping, receptiveness to other promotions previously offered, or any other information which is specified by a retail corporation or brand corporation. The management function includes the storage of information indicative of each brand of product, the identification of which brand products are carried by the
20 retail corporation, the storage of pricing, quantity and size information relative to the brand products, the storage of consumer information including the identification of specific consumers and the shopping behavior history of specific consumers. The analysis function includes the analysis of consumer behavior, and the analysis of consumer behavior relative to specific brands and categories of products. The host
25 computer 10 also performs retail household analysis and segmentation.

The host computer 10 is interfaced with a data display and manipulation unit 23, such as video displays, printers, keyboards, etc., that may be utilized to generate reports for specific brands, for specific categories of products, for specific pricing, for specific retail chains, for specific consumers, or any other reporting based on the
30 information stored in the host computer 10. The host computer 10 may provide...

PAGE 19/98 * RCVD AT 8/4/2006 9:59:10 AM [Eastern Daylight Time] * SVR:USPTO-EFAXF-5/14 * DNIS:2738300 * CSID:7038467799 * DURATION (mm-ss):12-58

WO 98/21713

PCT/US97/20765

may be interfaced with an Internet or Intranet gateway such that the host computer 10 can receive, store and analyze information relative to home shopping behavior of consumers.

The retail corporation computer 12 maintains household and consumer demographic and summary information for the entire retail corporation chain. The host computer 10, retail corporation computer 12 and in-store computer 15 allow the retail corporation chain to take consumer demographic redundancy out of each individual store and maintain it in a single source at a corporate level. The retail corporation computer 12 keeps track of per household promotional limits. This information is provided to the host computer 10. Information indicative of promotions available to a particular household are downloaded from the host computer 10 to the in-store consumer interface (kiosk) 17, either directly or via the in-store computer 15, for providing the appropriate retail chain discount to the consumer. A similar process applies to specific brand information. Based on specific criteria established by the brand, certain brand discounts are provided to the consumers meeting the appropriate consumer profile. The brand corporation computer 11 and retail corporation computer 12, in conjunction with the host computer 10, maintain responsibility for ensuring that a household does not exceed a promotional limit. Alternatively, the host computer 10 can maintain all household and consumer information, and any other information that could be stored on the retail corporation and brand computers 12, 11. In this case the retail corporation and brand corporation may be provided with a passive unit interfaced to the host computer 10 for accessing and/or manipulating data.

The retail corporation computer 12 and host computer 10 are interfaced with the in-store POS 20, either directly or via the in-store computer 15, such that each individual store sends transaction data to the retail corporation computer 12 and host computer 10. Therefore, specific consumer behavior in a particular store is updated in both the retail corporation computer 12 and host computer 10. Additionally, the interface between the POS 20 and the retail corporation and host computers 12, 10

WO 98/21713

PCT/US97/20765

from the brand corporation computer 11 by the host computer 10. The brand promotions are downloaded from the host computer 10 to the retail corporation computers 12 and in-store computers 15 of retail corporations carrying the specific brand. This information is thereafter downloaded to the individual in-store kiosks 17. The kiosks 17 are provided in the store for direct interface to consumers so that consumers may be uniquely identified at the kiosks, such as, the consumer entering a unique identifying code and pin, or the consumer utilizing a card which uniquely identifies the consumer. The kiosk 17 then retrieves information indicative of promotions being offered to the consumer and delivers this promotional information to the consumer in the form of a shopping list.

Referring also to Fig. 2, the consumer enters the store and is provided with a welcome message on the kiosk. The consumer then uniquely identifies him or her self and the kiosk checks if the consumer is a participant in the merchandising system. A local database of frequent shoppers may be maintained at the kiosk 17 or in-store computer 15. Alternatively, every consumer may be validated through the host computer 10. If the consumer is not identified as a valid participant, the consumer is invited to register and the consumer is asked to provide specific identification information. If the consumer registers, the consumer may be provided with a complementary discount shopping list. The program then exits. If the consumer is identified as a valid participant, the kiosk 17 retrieves specific UPC discount information for the consumer. Then a shopping list is printed for the consumer. Finally the discount information is transferred to the POS and the program exits.

Referring now to Fig. 3, the shopping list provides the consumer with a welcome, special messages, and a listing of valid promotions being offer to the consumer. The consumer may reference the list throughout the shopping experience. The list generated in the store and provided to the consumer includes specific promotion information including special discounts offered to the consumer. The pricing information is provided as a net price list. The list includes an identification of the retail item, the regular in-store price, the savings (either in percent or in amount) and the net price (Your price) to be paid.

WO 98/21713

PCT/US97/20765

information such as total savings available during the shopping experience, the total savings to date, and other information may be printed on the list.

Referring now to Figs. 1 and 4, the discounts are provided to the consumer at the POS 20. The consumer enters the POS 20 and is identified as a participant in the system. As discussed above with respect to Fig. 2, the specific discount information for this shopping experience is transferred from the kiosk 17 to the POS 20, for example via the in-store computer 15. At any time during checkout, if the scanned UPCs match an item on the list, the consumer receives the discount. The shopping behavior of the consumer during the shopping event is then provided to the retail corporation computer 12 and host computer 10 via the in-store computer 15 so that the consumer profile can be updated.

Referring again to Fig. 1, each in-store computer 15 within a retail corporation includes an interface unit 27. The interface unit includes a data display (monitor) data input device (keyboard) and data output device (printer). The In-Store computer 15 is interfaced to the retail corporation computer 12 and host computer 10 via standard telecommunication devices, routers, modems, etc. Alternatively, any suitable means of communications may be used between the different components of the system, such as cable, satellite, RF, etc. Promotions are downloaded from the retail corporation computer 12 and/or the host computer 10 to the in-store computer 15. The In-Store computer 15 is interface with at least one controller contained in the interface unit 27 that manages file maintenance, and ensures promotional integrity, and provides on-line promotional discounts independent of existing functions and operations.

The consumer profile maintained in the host computer 10 may also be used to offer specific promotions and discounts to a consumer utilizing a home shopping service. The discounts may be based on both the on-line and in-store shopping behavior of the consumer. As used herein, the terms "on-line" and "home shopping" are intended to refer to the activity of the consumer away from a retail store, including but not limited to shopping via telephone, e-mail, mail, courier, on-line service (provided by telephone, cable, satellite, or any other suitable form of communication),

WO 98/21713

PCT/US97/20765

transaction. It is well known that the Internet or other on-line service may be used as another form of mass marketing. In some cases, certain on-line programs and services track the response of subscribers to certain questions or offers. However, the data collected and utilized is restricted to what occurs on-line. However, most consumer activity does not occur on-line, but instead occurs in the store. The present invention utilizes this fact to provide a new and previously unknown service. In accordance with the invention, a consumer's on-line activity is combined with that same consumer's activity off-line, i.e. in-store purchasing behavior, for the purposes of targeting more effectively.

In order to implement this home shopping feature of the invention, when a consumer visits a supermarket and makes purchases using a consumers card or other means which specifically identifies the consumer, these purchases are registered in a central data base of the host computer 10, as described above. For "on-line shopping" the consumer interfaces with a home shopping server 30 using a home computer 33. The home computer may be a standard PC interfaced with an on-line service via telephone lines. Alternatively, any form of communication may be used with the home shopping feature of the invention. As discussed above, "home shopping" is not limited to shopping conducted from within someone's house. Instead, home shopping is intended to refer to any shopping conducted by the consumer outside of a traditions retail store.

During home shopping, the consumer may visit the on-line shopping service (web site) of a retail corporation or brand corporation. Based on the in-store information collected and stored on the central database of the host computer 10, the consumer is offered targeted incentives and promotions. Based on the consumer's on-line activity, including making retail purchases, the consumer profile is updated at the central data base maintained on the host computer 10. This information may also be updated to the retail corporation computer 12 or brand corporation computer 11. Therefore, the purchasing profile of the consumer is based both on in-store activity and on-line activity.

In accordance with the invention, a consumer planning to make an in-store

WO 98/21713

PCT/US97/20765

visit can utilize the home shopping feature of the invention. For example, when planning a shopping experience, a consumer can request a shopping list via the internet or other on-line service, much like the shopping list printed at a kiosk 17 in-store. The consumer can then use the home-generated shopping list to plan purchases during the in-store visit. The home-generated shopping list is generated with an expiration date so that the consumer knows how long the discounts, net prices and promotional items will be available to the consumer.

In order to offer net pricing to a specific consumer on a shopping list, information indicative of the price list used by the particular retail store must be made available to the system of the present invention so that the discounts offered to a particular consumer are properly applied to an in-store price to arrive at a final or net price. The system of the present invention must be updated with the most current in-store retail pricing associated with the specific items so that the net pricing of the products offered to specific consumers may be determined.

The system of the invention provides several alternatives such that if an in-store list is generated for a consumer, and during shopping the discount information in the POS is lost for any reason, the consumer can still redeem their value pricing manually at checkout. Alternatively, if the consumer does not generate a shopping list upon entering the store at the kiosk, the discounts may still be provided to the consumer for the specific UPC codes when the consumer is identified at the POS.

The host computer database is updated whenever an event occurs. An event occurs when the system of the invention sees a combination of the following information:

1. a time stamp;
2. a consumer number; and
3. a UPC purchase.

Consumer transaction history is initially collected at the POS. Each UPC on a

WO 98/21713

PCT/US97/20765

consumer receipt is compared against a master PLU file to determine if history is to be stored by UPC or by a category or brand category of merchandise. For example, there are categories of information storage based on the particular UPC of a purchased item. This information is individually updated for the specific UPC being tracked. In
5 another category, various UPCs are tracked together in a single category. This category may be by brand, i.e., only UPCs of products within a certain brand are associated with the category. Alternatively, the category may be across brand lines and the category is associated with a certain type of product, such as soft drinks. It is possible that an UPC is tracked in several categories, such as an individual UPC
10 category, a brand category and/or a product type category.

Each event occurring for which history is to be tracked by UPC is updated into a household UPC sales table. Each event occurring for which history is to be tracked by category of good is updated into the household category sales table. Each category defines the number of household purchase histories to be kept. Transactions occurring
15 without a consumer number may be consolidated with an accumulated "event" maintained daily.

The specific information described above may be used to classify consumers based on their specific purchases. Brand and Retailer corporations alike want to know "who they are talking to" when targeting advertising and promotions to consumers so
20 they can increase the efficiencies of the marketing programs. In order to maximize these efficiencies, consumers are classified in accordance with the invention. This classification will allow marketers to target consumers based on their value to a specific brand or to a chain. This value can be quantified in terms of product loyalty, store loyalty, purchasing frequency and amount, and other factors which are directly
25 related to product sales.

The process of classifying consumers is outlined as follows:

- Consumer behavior is tracked via the scanner (POS) to the UPC level. This means that the system of the invention literally tracks every ounce for each product that is purchased and when. This is accomplished by correlating UPCs of items

WO 98/21713

PCT/US97/20765

purchased with the other receipt information including date and time of purchase, store ID, consumer ID and household ID.

• Based on this information, consumers will be classified according to buying frequency, (how often and when they purchase the product), actual volume within the category, (how much they buy of the category as measured in ounces or count), percent (%) of volume of promoted brand as it relates to all other sales within the category, to determine how loyal a consumer is to a particular brand), total dollar volume in the store, profitability and so on.

• Based on this information, consumers will be classified for targeting purposes. As will be understood by those skilled in the art, there are countless classifications that can be generated based on the stored information. Fore example, classifications may be based on product type, product volume, shopping frequency, amount spent, brand loyalty, etc.

• Classification could include but not be limited to: Loyal, Switcher and Competitive; Light Moderate and Heavy Users; Platinum, Gold, Silver, Bronze; High Volume/High Share of Category, Moderate Volume, High Share of Category, etc.,

• Based on the consumer's classification, a percentage (%) discount or dollar amount (\$) discount will be applied to the consumer either on a per product or on a total order basis.

• These special discounts will be stored in each store's server.

• When the consumer is in the store the appropriate discount, % or \$, is applied to the products they purchase or the total shopping order.

Referring now to Figs. 5, 6 and 7, various examples of consumer classification are provided. In Fig. 5, A retail corporation consumer classification is provided. In this case, consumers are classified based on two criteria: profitability and volume. The consumers that provide high profit margins to the retail chain and also purchase large volumes of merchandise are considered most valuable. The retail chain

WO 98/21713

PCT/US97/20765

classifies the consumer based on the specific profitability-volume combination established by the consumer's profile. These categories are used to determine the specific discount offers to be provided to specific consumers based on their classification.

5 Fig. 6 is an illustration of a brand corporation consumer classification. In this case, the consumer is classified by the percentage share of category and by purchase volume. High share, high volume consumers are considered loyal to the brand, and therefore are highly valued brand consumers. The lower share, lower volume consumers are considered less loyal, and therefore are not as highly valued brand
10 consumers. The discounts and promotions provided to consumers are based upon the consumers' classification.

 Fig. 7 provides more specific details of discounts to be provided to a consumer by a brand corporation. In this example, the consumer is classified based on purchase volume and share of category purchases (similar to Fig. 6). However, Fig. 7 shows
15 exemplary discounts to be provided to the consumer based on the consumer purchasing behavior.

 Once the consumer profile is completed and/or the consumer has been classified, this information may be used for targeting samples to specific consumers. As is known in the art, much like couponing, brand and retail corporations want to
20 have the ability target samples to the most profitable consumer opportunities. Therefore, the present invention may be used to provide targeted samples to specifically identified consumers. This may be accomplished by offering 100% discounts (free products) for products that must be selected/picked-up by the consumer during the shopping experience. Alternatively, the system of the present
25 invention may be used with an electronic sample machine that will dispense samples to consumers as they enter the store based on past purchase history and brand and retail established requirements.

 The sample program may be implemented in accordance with the following process:

WO 98/21713

PCT/US97/20765

- Brands corporations are contracted to participate.
- UPC level consumer behavior is tracked and classified according to brand specifications, as described above.
- A list of qualifying consumers for each sample will be held in the in-store computer 15 of each store in the retail corporation.
- As the consumer enters the store, they will swipe their consumer card or otherwise identify themselves at either a kiosk 17 or at an electronic sampler machine.
- If that particular consumer profile meets the criteria as established by the brand, then the consumer would be awarded a sample from the machine.
- 10 Alternatively, when the consumer shopping list is printed at the kiosk 17, a list of free sample or 100% discount items are printed.
- A data base will be established of whom received a sample.
- The consumer buying activity will also be tracked over the next few months to determine who actually purchased the free sample product and when. This
- 15 information is used to gage the effectiveness of the free sample program. For example, if the consumer purchases items having UPCs corresponding to a previously awarded free sample, the sample program will be gauged a success with respect to that consumer.

As will be understood by those skilled in the art, the consumer information

20 available in accordance with the present invention may be used for a combination "In-Store" and "Direct Mail" program which will enable select consumers to save money on hundreds of products in the store through both in-store shopping lists as described above, and by direct may coupons and discounts. Unlike a typical "direct mail" program in which brands and retailers randomly send out coupons for consumers to

25 redeem, usually anywhere in the market, the system of the present invention provides the ability to perform a "Targeted Custom Mailer", which may also tie into the stores

WO 98/21713

PCT/US97/20765

The targeted mailing of the invention may be accomplished as follows:

- Brand corporations are contracted to promote their products in the system.
- Based on criteria established by the brand and retail corporations, consumers may be classified according to past purchase behavior as tracked through the retailer's scanning equipment, for example, using the consumer classification described above.
- This consumer information will be applied to each of the products in the system for determining which discounts allocated to each product by the brand or retail applies to that particular consumer. For example, multiple discounts may be established for particular products based on both brand and retail criteria.
- Once determined, a list of products and custom offers will be created for each consumer.
- Offers can appear in either the form of a "dollar amount (\$)" discount", a "percentage (%) discount", or a "Net Price", which is a combination of each stores list price and the appropriate discount.
- Every list of products is then stored in the "server" of each of the retailer's location so a consumer can receive their discounts regardless of where they shop.
- A similar list could be stored in the server of other retailers in the market or throughout the country in the case of a consumer using more than one chain of stores.
- The same list of products is then sent via direct mail to the targeted consumers.
- When the consumer visits the store, they bring their list to remind them of the products and discounts.
- Each list could have a consumer specific Bar Code which would match the bar code or consumer code on the consumer's frequent consumer card.
- When the consumer gets to the register with their products they present a consumer's card or they scan the code on the flyer. When the code is swiped, that

WO 98/21713

PCT/US97/20765

particular consumer's list of products and custom discounts is immediately sent from the server to that register.

- As one of the featured products is scanned, the appropriate discount is automatically applied to the consumers bill.

5 • The discounts are electronically calculated for reimbursement from the brand corporations, as appropriate.

10 Although the invention has been described and illustrated with respect to exemplary embodiments thereof, the foregoing and various other additions and omissions may be made therein and thereto without departing from the spirit and scope of the invention.

We claim:

WO 98/21713

PCT/US97/20765

CLAIMS:

1. A merchandising system, comprising:

means for collecting data indicative of the purchasing behavior of a plurality of individual consumers;

5 consumer profile means responsive to said data for characterizing the purchasing behavior of each one of said plurality of individual consumers to provide a respective consumer profile indicative of the purchasing behavior of each respective one of said plurality of individual consumers; and

10 discount means for providing discounts to each one of plurality of individual consumers, an amount of each discount being based on said respective consumer profile of said respective consumer.

2. A merchandising system according to claim 1, wherein said discount means includes:

15 means for uniquely identifying each respective one of said plurality of individual consumers; and

20 consumer interface means responsive to the unique identification of a respective consumer for providing a net price list to said respective consumer based on said respective consumer profile, said net price list including a list of discount products and a net price of the discount products, said net price being a retail price for the discount products less the discounts applied to the discount products based on said respective consumer profile.

- 25 3. A merchandising system according to claim 2, wherein said means for collecting data includes a point of sale means responsive to the unique identification of said respective consumer for applying said net prices to products purchased by said respective consumer appearing on said net price

WO 98/21713

PCT/US97/20765

4. A merchandising system according to claim 3, wherein said consumer profile means is responsive to selected products purchased by said respective consumer at said point of sale means for modifying said respective consumer profile for said respective consumer.

5 5. A merchandising system according to claim 4, wherein said consumer profile means is further responsive to brand corporation criteria for providing said respective consumer profile for each respective consumer.

6. A merchandising system according to claim 5 wherein said consumer profile means is further responsive to retail corporation criteria for providing said
10 respective consumer profile for each respective consumer.

7. A merchandising system according to claim 4 wherein said consumer profile means is further responsive to retail corporation criteria for providing said respective consumer profile for each respective consumer.

8. A merchandising system according to claim 1, wherein said discount means
15 includes:

means for uniquely identifying each respective one of said plurality of individual consumers; and

consumer interface means responsive to the unique identification of a respective consumer for providing an in-store circular of net price offers to
20 said respective consumer based on a consumer classification determined in response to said respective consumer profile, said in-store circular including a list of discount products and the net price of the discount products, the net price being the store retail price for the discount products less the discounts applied to the discount product based on said respective consumer profile.

25 9. A merchandising system according to claim 8, wherein said consumer classification is determined based a consumer's loyalty to a particular brand as

WO 98/21713

PCT/US97/20765

10. A merchandising system according to claim 9, wherein said consumer classification is further determined based on a consumer's shopping volume as indicated by a respective consumer profile.
- 5 11. A merchandising system according to claim 3, wherein said means for collecting data indicative of the purchasing behavior of a plurality of individual consumers further includes means for monitoring the on-line purchasing behavior of a respective consumer.
- 10 12. A merchandising system according to claim 1, wherein said means for collecting and storing data indicative of the purchasing behavior of a plurality of individual consumers includes means for monitoring the on-line purchasing behavior of a respective consumer.
- 15 13. A merchandising system according to claim 1, further comprising on-line interface means for directly interfacing with a selected group of said plurality of individual consumers, said group including consumers exhibiting purchasing behavior via on-line services, and wherein each consumer in said group is provided with product discounts based on said respective consumer profile.
- 20 14. A merchandising system according to claim 13, wherein said means for collecting data includes a point of sale means located in a retail store, and wherein said consumer profile means is responsive to selected products purchased by said respective consumer at said point of sale means for modifying said respective consumer profile for said respective consumer.
- 25 15. A merchandising system according to claim 14, wherein said consumer profile means is further responsive to the on-line purchasing behavior of said respective consumer for modifying said respective consumer profile for said respective consumer.
16. A merchandising system according to claim 15, wherein said discount means includes means for uniquely identifying each respective one of said plurality

WO 98/21713

PCT/US97/20765

of individual consumers in said group during operation of said on-line interface means; and wherein in response to the unique identification of a respective consumer a net price list is provided to said respective consumer via said on-line interface means based on said respective consumer profile, said net price list including a list of discount products available on-line and the net price of the discount products, the net price being the on-line list price for the discount products less the discounts applied to the discount products based on said respective consumer profile.

17. A merchandising system according to claim 1, further comprising product sample dispensing means including:

means for uniquely identifying each respective one of said plurality of individual consumers; and

a product sample dispense responsive to the unique identification of a respective consumer for providing a targeted product sample to said respective consumer based on said respective consumer profile.

18. A merchandising system according to claim 17, wherein consumer profile means is responsive to the purchasing behavior of said respective consumer after receipt of said targeted product sample for evaluating the efficacy of said targeted product sample.

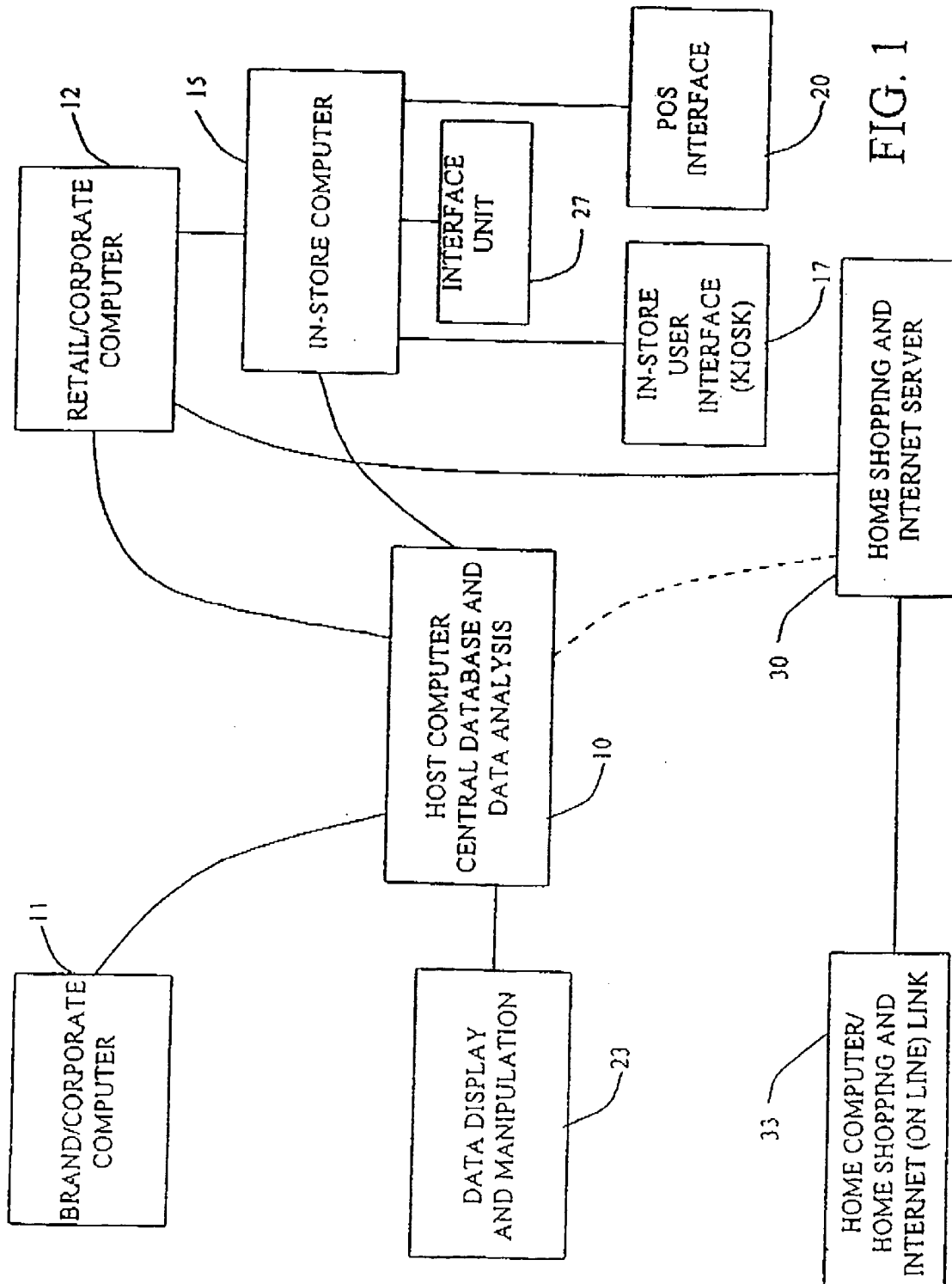
19. A merchandising system according to claim 1, wherein said discount means includes means for generating coupons for a respective consumer based on said respective consumer profile.

20. A merchandising system according to claim 19, wherein said coupons are mailed to said respective consumer.

WO 98/21713

PCT/US97/20765

1 / 7



WO 98/21713

PCT/US97/20765

2 / 7

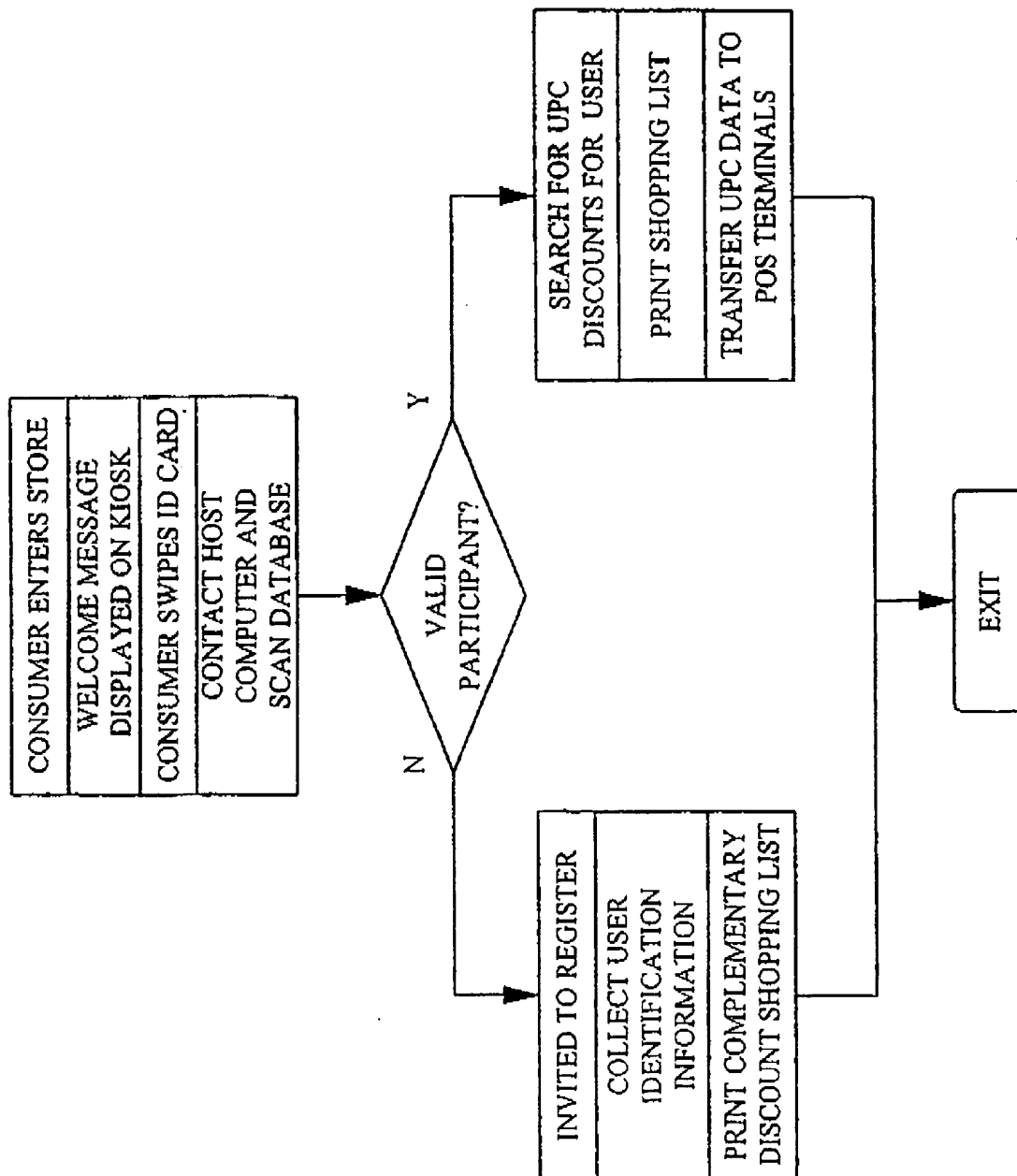



FIG. 2

WO 98/21713

PCT/US97/20765

3 / 7

Welcome to
 **TOTAL FOODS**
 Linda Smith

Your Total Foods offers for
 October 22, 1996 9:26pm | Your Price

Coca Cola	Reg \$3.19	\$2.19
Aisle 1 12 pack	Save 31%	
Total Foods Super Saver Gold Award !		
Green Giant Potatoes	Reg \$0.99	\$0.49
Aisle 2 10lb bag	Save 50%	
White or Red - our best to you!		
Kellogg Frosted Flakes	Reg \$1.69	\$0.94
Aisle 3 24 oz.	Save 31%	
Wake up to a Kellogg's nutritious breakfast		
Bowden Milk 1.2&3%	Reg \$2.29	\$1.14
Dairy 1 gal	Save 50%	
Milk Anyone?		
Jimmy Dean Bacon	Reg \$1.59	\$1.09
Meat 1lb pack	Save 33%	
Extra lean - sizz'lin quick		
Scott tissues assorted	Reg \$1.49ea	\$1.49
Aisle 4 4pk 4000 shi	Save 50%	
There is nothing quite like it.		
Nalley Jalpeno Chips	Reg \$1.99	\$0.99
Aisle 5 12 oz bag	Save 50%	
Real hot just the way you like it!		
Nalley Ranch Dips	from \$1.59	\$1.04
Aisle 5 4 oz	Save 31%	
Ideal with Nalley's Chips - Save 50 cents!		
Total Savings: \$ 5.85 Total Savings to Date: \$ 218.65 Thankyou for shopping at Total Foods		

TOTAL FOODS SUPER SAVER

Line 1: Product identifier in bold
 Retail Price
 Show net retail in bold
 Retail = lowest retail in promo
 = "from" only if multiple retails in promo

Line 2: Show Product Location in (Caps/Lower Case)
 Show Pack & Size in regular print
 Show discount percent in regular print
 Pack & Size = user entered at promo creation
 or default to least expensive item.

Line 3: One line 30 character tag line (regular type)
 (tag line reduced to 30 char to reduce clutter)

Note:
 Dashes for readability and coupon simulation.

Offers sorted by logical (normal) shopping pattern

By profile option, items discounted more than x%
 will have the net retail highlighted with an "ee".

Boxed area to identify aisle location.

Aisle location limited to 8 characters.

FIG. 3

WO 98/21713

PCT/US97/20765

4 / 7

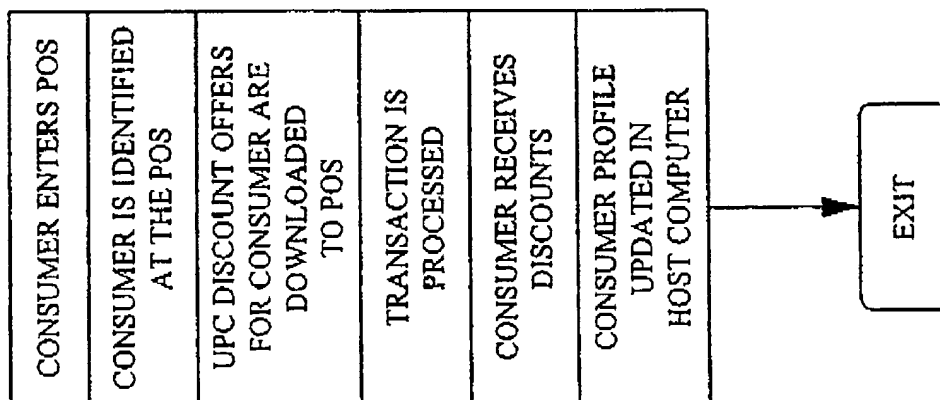


FIG. 4

WO 98/21713

PCT/US97/20765

5 / 7

RETAIL CORPORATION CLASSIFICATION OF CONSUMER

Customer Classification Scheme

Bronze	Silver	Gold
Nuggets	Bronze	Silver
Nuggets	Nuggets	Bronze

*Profitability**Volume***FIG. 5**

WO 98/21713

PCT/US97/20765

6 / 7

BRAND CORPORATION CLASSIFICATION OF CONSUMER

Customer Classification Scheme

LOYAL, SWITCHER AND COMPETITIVE Low Volume High Share	LOYAL & SWITCHER Moderate Volume High Share	LOYAL High Volume High Share
COMPETITIVE Low Volume Moderate Share	LOYAL, SWITCHER AND COMPETITIVE Moderate Volume Moderate Share	LOYAL & SWITCHER High Volume Moderate Share
COMPETITIVE Low Volume Low Share	COMPETITIVE Moderate Volume Low Share	LOYAL, SWITCHER AND COMPETITIVE High Volume Low Share

% Share
Of
Category

Volume →

FIG. 6

WO 98/21713

PCT/US97/20765

7 / 7

BRAND CORPORATION CLASSIFICATION OF CONSUMER

Customer Classification Scheme

% Share Of Category ↑ Loyal 66%+ Promoted Brand Switcher 33%-66% Competitive 66%+ Competitive Brand	\$0.50 Off 64oz. Size	\$1.00 Off 128oz. Size Buy 2	Promote Multiples or Full Price
	Not Worth Investment	\$0.75 Off 96oz. Size	\$1.00 off 128oz. Size Free Samples
	Not Worth Investment	Not Worth Investment	\$1.00 Off 64oz. Size Free Samples
	Light 32oz or Less	Moderate 33oz.-80oz.	Heavy 80oz.+ per mos.
	Purchase Volume →		

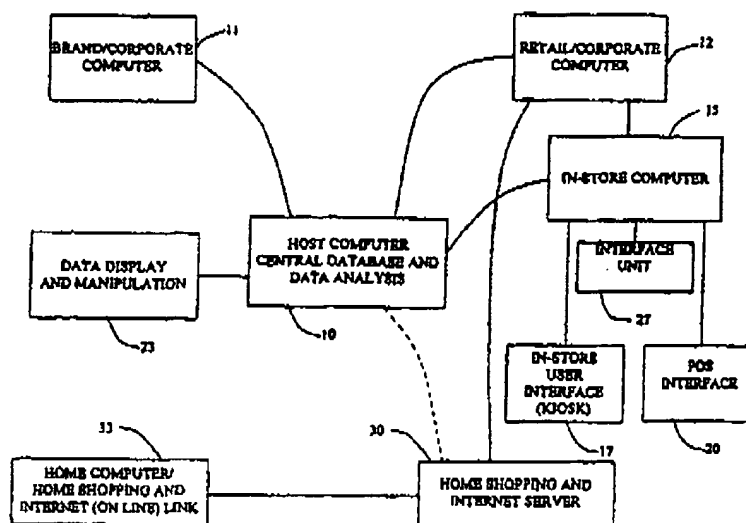
FIG. 7

PCTWORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureau

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁶ : G06F 17/60		A3	(11) International Publication Number: WO 98/21713
			(43) International Publication Date: 22 May 1998 (22.05.98)
(21) International Application Number: PCT/US97/20765		(81) Designated States: AU, CA, JP, MX, US, European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).	
(22) International Filing Date: 14 November 1997 (14.11.97)		Published <i>With international search report.</i> <i>Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i>	
(30) Priority Data: 60/030,492 15 November 1996 (15.11.96) US			
(71) Applicant (for all designated States except US): 1.2.1. PRE- CISE INFORMATION LLC [US/US]; 134 Charter Oak Drive, New Canaan, CT 06840 (US).		(88) Date of publication of the international search report: 12 November 1998 (12.11.98)	
(72) Inventors; and (75) Inventors/Applicants (for US only): LEVILLE, Kevin, J. [US/US]; 134 Charter Oak Drive, New Canaan, CT 06840 (US). KLINGENBERG, Tim, P. [US/US]; 12314 East 27th, Spokane, WA 99216 (US). BLYTH, Michael [US/US]; 2311 Central Park, Evanston, IL 60201 (US).			
(74) Agent: FREDERICK, James, R.; Ware, Fressola, Van der Sluys & Adolphson LLP, Bradford Green, Building Five, 755 Main Street, P.O. Box 224, Monroe, CT 06468 (US).			

(54) Title: MERCHANDIZING SYSTEM



(57) Abstract

A host computer (10), which is used to control point of a merchandising system, is interconnected to a brand corporation computer (11) and an in-store computer (15). Brand corporation computer (11) is used to offer current discounts on products while in-store computer (15) serves as an interface to consumer interface kiosks (17) and in-store points of sale (20). The host computer (10) tracks consumer buying behavior, analyzes the information according to brand and unit, and provides specific information to the brand corporation computer (11) and the in-store computer (15).

FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AL	Albania	ES	Spain	LS	Lesotho	SI	Slovenia
AM	Armenia	FI	Finland	LT	Lithuania	SK	Slovakia
AT	Austria	FR	France	LU	Luxembourg	SN	Senegal
AU	Australia	GA	Gabon	LV	Latvia	SZ	Swaziland
AZ	Azerbaijan	GB	United Kingdom	MC	Monaco	TD	Chad
BA	Bosnia and Herzegovina	GE	Georgia	MD	Republic of Moldova	TG	Togo
BB	Barbados	GH	Ghana	MG	Madagascar	TJ	Tajikistan
BE	Belgium	GN	Guinea	MK	The former Yugoslav Republic of Macedonia	TM	Turkmenistan
BF	Burkina Faso	GR	Greece	ML	Mali	TR	Turkey
BG	Bulgaria	HU	Hungary	MN	Mongolia	TT	Trinidad and Tobago
BJ	Benin	IE	Ireland	MR	Mauritania	UA	Ukraine
BR	Brazil	IL	Israel	MW	Malawi	UG	Uganda
BY	Belarus	IS	Iceland	MX	Mexico	US	United States of America
CA	Canada	IT	Italy	NE	Niger	UZ	Uzbekistan
CF	Central African Republic	JP	Japan	NL	Netherlands	VN	Viet Nam
CG	Congo	KE	Kenya	NO	Norway	YU	Yugoslavia
CH	Switzerland	KG	Kyrgyzstan	NZ	New Zealand	ZW	Zimbabwe
CI	Côte d'Ivoire	KP	Democratic People's Republic of Korea	PL	Poland		
CM	Cameroon	KR	Republic of Korea	PT	Portugal		
CN	China	KZ	Kazakhstan	RO	Romania		
CU	Cuba	LC	Saint Lucia	RU	Russian Federation		
CZ	Czech Republic	LI	Liechtenstein	SD	Sudan		
DE	Germany			SE	Sweden		

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US97/20765

A. CLASSIFICATION OF SUBJECT MATTER																				
IPC(6) : G06F 17/60 US CL : 705/14; 235/383 According to International Patent Classification (IPC) or to both national classification and IPC																				
B. FIELDS SEARCHED																				
Minimum documentation searched (classification system followed by classification symbols) U.S. : 235/375, 383; 364/400; 705/1, 14; 707/104																				
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched None																				
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) None																				
C. DOCUMENTS CONSIDERED TO BE RELEVANT																				
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.																		
Y	US 3,792,437 A (BLUMENTHAL et al) 12 February 1974, see abstract.	1-20																		
Y	US 4,908,761 A (TAI) 13 March 1990, see abstract.	1-20																		
Y	US 5,380,991 A (VALENCIA et al) 10 January 1995, see abstract.	1-20																		
Y,E	US 5,592,560 A (DEATON et al) 07 January 1997, see abstract.	1-20																		
Y,E	US 5,621,812 A (DEATON et al) 15 April 1997, see abstract.	1-20																		
Y,E	US 5,642,485 A (DEATON et al) 24 June 1997, see abstract.	1-20																		
<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/> See patent family annex.																				
<table border="0"> <tr> <td>* Special categories of cited documents:</td> <td>* T</td> <td>later documents published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</td> </tr> <tr> <td>* A</td> <td>document defining the general state of the art which is not considered to be of particular relevance</td> <td>* X</td> </tr> <tr> <td>* B</td> <td>earlier document published on or after the international filing date</td> <td>* Y</td> </tr> <tr> <td>* L</td> <td>document which may throw doubt on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</td> <td>* Y</td> </tr> <tr> <td>* O</td> <td>document referring to an oral disclosure, use, exhibition or other means</td> <td>* A</td> </tr> <tr> <td>* P</td> <td>document published prior to the international filing date but later than the priority date claimed</td> <td>* A</td> </tr> </table>			* Special categories of cited documents:	* T	later documents published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention	* A	document defining the general state of the art which is not considered to be of particular relevance	* X	* B	earlier document published on or after the international filing date	* Y	* L	document which may throw doubt on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	* Y	* O	document referring to an oral disclosure, use, exhibition or other means	* A	* P	document published prior to the international filing date but later than the priority date claimed	* A
* Special categories of cited documents:	* T	later documents published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention																		
* A	document defining the general state of the art which is not considered to be of particular relevance	* X																		
* B	earlier document published on or after the international filing date	* Y																		
* L	document which may throw doubt on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	* Y																		
* O	document referring to an oral disclosure, use, exhibition or other means	* A																		
* P	document published prior to the international filing date but later than the priority date claimed	* A																		
Date of the actual completion of the international search 04 MARCH 1998		Date of mailing of the international search report 18 SEP 1998																		

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US97/20765

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y,E	US 5,644,723 A (DEATON et al) 01 July 1997, see abstract.	1-20
Y,E	US 5,649,114 A (DEATON et al) 15 July 1997, see abstract.	1-20
Y,E	US 5,687,322 A (DEATON et al) 11 November 1997, see abstract.	1-20

**This Page is Inserted by IFW Indexing and Scanning
Operations and is not part of the Official Record**

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images include but are not limited to the items checked:

- ☐ **BLACK BORDERS**
- ☐ **IMAGE CUT OFF AT TOP, BOTTOM OR SIDES**
- ☐ **FADED TEXT OR DRAWING**
- ☐ **BLURRED OR ILLEGIBLE TEXT OR DRAWING**
- ☐ **SKEWED/SLANTED IMAGES**
- ☐ **COLOR OR BLACK AND WHITE PHOTOGRAPHS**
- ☐ **GRAY SCALE DOCUMENTS**
- ☒ **LINES OR MARKS ON ORIGINAL DOCUMENT**
- ☐ **REFERENCE(S) OR EXHIBIT(S) SUBMITTED ARE POOR QUALITY**
- ☐ **OTHER:** _____

IMAGES ARE BEST AVAILABLE COPY.

As rescanning these documents will not correct the image problems checked, please do not report these problems to the IFW Image Problem Mailbox.